

**DRAFT MINUTES  
MICHIGAN FOREST FINANCE AUTHORITY (MFFA or AUTHORITY)  
BOARD OF DIRECTOR'S MEETING  
Wednesday, June 24, 2009  
Stevens T. Mason Building  
530 West Allegan  
2:00 p.m.**

**AUTHORITY BOARD OF DIRECTOR'S PRESENT**

Mr. Tom Saxton, Chair, Department of Treasury  
Mr. Shawn Hagan, the Forestland Group  
Dr. Paul Eisele, Masco Corporation  
Ms. Mindy Koch, Department of Natural Resources (DNR), (Representing Director Rebecca A. Humphries as Vice Chair, DNR)  
Mr. Kelvin Smyth, New Page Corporation  
Mr. Warren Suchovsky, Suchovsky Logging  
Dr. Karen Potter-Witter, Michigan State University  
Ms. Jamie Scripps, Department of Economic Growth, (Representing Director Stanley "Skipp" Pruss)

**MICHIGAN FOREST FINANCIE AUTHORITY OTHERS PRESENT**

Ms. Cara Boucher, State Forester, DNR  
Ms. Lynne M. Boyd, DNR  
Mr. Robert Brackenbury, Attorney General's Office  
Mr. David Neumann, DNR  
Ms. Kim Korbecki, DNR  
Dr. Robert Froese, Michigan Technical University

**I. WELCOME / INTRODUCTIONS**

**Chair Saxton** called the Michigan Forest Finance Authority (Authority or MFFA) Board meeting to order at 2:05 p.m.

**II. AGENDA REVIEW**

**Chair Saxton** asked Ms. Boucher to review the agenda. **Ms. Boucher** reviewed the agenda and commented that the majority of it was to discuss the Governor's Executive Order (#2009-22) which directly affects MFFA funding and projects. **Chair Saxton** asked for comments; there was none. He then requested a motion to adopt the agenda, as presented.

**MOTION:**     **Dr. Eisele** moved to adopt the June 24, 2009 MFFA agenda, as presented; supported by **Dr. Potter-Witter**.  
                  **Motion passed unanimously.**

**III. ADOPTION OF MINUTES / March 18, 2009**

**Chair Saxton** asked the Board if there were any comments on the March 18, 2009 MFFA Board meeting Minutes; there were none. He then requested a motion to adopt the March 18, 2009 Michigan Forest Finance Authority Board Meeting Minutes.

**MOTION:**     **Mr. Suchovsky** moved to adopt the March 18, 2009 MFFA Meeting Minutes, as presented; supported by **Mr. Hagan**.  
                  **Motion passed unanimously.**

**IV. PUBLIC COMMENTARY**

**Chair Saxton** asked if there were any public comments; there were none.

**V. INFORMATION**

**Chair Saxton** requested Ms. Boucher update the MFFA on the information items.

**A. Governor's Executive Order**

**Ms. Boucher** reported Executive Order (Order) #2009-22 was issued on May 5, 2009, implementing expenditure reductions; it was approved by the House and Senate that day. The Order reduced the strategic grant for the MFFA by \$4,950,000. This created a shortfall of funding that needed to be addressed by the DNR.

During the month of May, the DNR spent time identifying additional costs and how to assure receipt of products from the projects that have already been completed or are near completion. **Ms. Boucher** stated she would review the projects status as of May 2009 for the MFFA.

**Ms. Boucher** reviewed a project handout with the MFFA (attached).

**Ms. Boucher** stated the DNR has had some discussion on the amount encumbered to History, Arts and Libraries (HAL), and how it will be paid. **Ms. Koch** commented because the money went to pay salary and wages, it was money that existed in their budget already, and since HAL is being dissolved their budget will not be affected if the DNR does not pay.

**B. Status Report on FFA Project****Red Pine Project**

**Ms. Boucher** reported the DNR is expecting that the RPP will yield sales on about 7,800 harvest acres. The decision was made to complete outstanding timber sale prep contracts. After the sales prep work was completed, the remaining tasks would be assigned to the DNR staff's Plan of Work (POW). **Ms. Boucher** stated the DNR has planting activities that need to be completed; staff is currently working on regeneration and cultivation work. The DNR will continue to track red pine activities and sales in order to track the impacts of the Red Pine Project. **Ms. Boucher** commented the red pine project was a great project and very successful.

**Spatial Inventory**

**Ms. Boucher** reported that four limited-term staff was hired to for this project. One person moved to another job however the position was not filled due to budget concerns. The remaining staff will be completing the project work in the northern Lower Peninsula by the end of the fiscal year. The staff members will then be assigned and funded for other activities related to normal DNR business through the end of the fiscal year. **Ms. Boucher** reported the project should be at a logical stopping point at the end of the fiscal year.

**IFMAP Stage I and II (IFMAP mobile)**

**Ms. Boucher** reported IFMAP Stage I is completed; Stage II is without funding, and the DNR has put it into the normal proposal process. Realistically, there are so DNR many projects in the queue it will most likely be awhile before it is completed. Also, the Department of Information Technology (DIT) incorrectly billed the DNR during the last year; the DNR has not received bills for there is an estimated \$85,000. This information shows on the spreadsheet under "encumbered."

One of the things IFMAP Stage I has done is increased staff efficiency. Staff is able to enter information on PDAs in the field, and then plug it into their computers when they return to the office. **Ms. Boucher** has received many comments that staff would like to go on with Stage II. **Dr. Potter-Witter** requested a reminder of what Stage II was; **Mr. Neumann** responded Stage II collects tree level data; measures actual sample point level.

#### **Forest Cultural Resource Management Project**

**Ms. Boucher** reported staff uses this everyday; the information is used for intrusive activities, not just from Forest, Mineral and Fire Management but from all DNR Divisions. **Dr. Eisele** asked if it shows procedures or locations; **Ms. Boucher** answered it shows fuzzed locations. It will show a map or star to indicate there is something in the area and describe what it is. Staff can then send an e-mail to HAL to let them know the location, and they can respond if there is anything in the area. It can also check for threatened or endangered species in the area. **Mr. Suchovsky** questioned if the DNR is charged by HAL; **Ms. Boucher** responded the DNR does not get charged for inquiries because it owns most of the data. If there was a need for someone to do a specific inventory, the DNR would then be charged.

#### **Woody Biomass Harvesting Guidance Development**

**Ms. Boucher** reported the project will be completed using DNR resources. The fifth draft has been sent out for review. There will be a conference call held in a few weeks to discuss, and try to come to an agreement to move the document to a larger audience. The DNR will be challenged now as to how it is going to be able to get the document distributed.

#### **Design and Development of the Permanent Sample Plot (PSP) System**

**Ms. Boucher** reported the MFFA approved both design and implementation of this project. The DNR is currently finishing the design portion and it should be finished this year. It will be paid for with DNR operating funding using FDF dollars. The DNR won't be able to implement it, or put plots on the ground but the design will be complete.

#### **Intensive Inventory of Northern Hardwood Stands on State Forests / Intensive Inventory of Oak Stands on State Forests**

**Ms. Boucher** reported a final report would be presented later in the meeting. She stated the report has just been completed, and the remainder of the funding will come out of the Division's operational budget using FDF. **Ms. Boucher** commented the investment made by MFFA over the years has been very successful for the DNR and the resources it is managing.

**Chair Saxton** asked the Authority if there were questions; **Mr. Suchovsky** asked if the red pine timber sales put up this fall would go to three year contracts. **Ms. Boucher** responded the contracts would go to three years on the sales field work is being finished on.

#### **C. Status Report on Spending**

##### **a. Fiscal Year 2009**

Details of the 2009 spending was covered under the "Governor's Executive Order."

#### **D. Northern Hardwood and Oak Intensive Inventory Design (Bharat Pokharel, Robert Froese, David Reed)**

**Mr. Neumann** introduced Dr. Froese. He reported this project was initially proposed more than a year ago. The project that was approved required investigating random sampling. A

contract was awarded to Michigan Technical University. **Mr. Neumann** turned the meeting over to Dr. Froese.

**Dr. Froese** commented that Dr. Pokharel put the presentation together for the MFFA. He thanked the MFFA for the opportunity, stating it was an educational project. Following are some key points from the presentation:

- **Objectives**

1. To verify habitat type at the stand level
2. To quantify stand structure (diameter distribution in Trees per Acre [TPA]) and Basal Area (BA) by diameter class)
3. To identify regeneration composition and structure (TPA by species, height class and origin [for oak stands]) and distribution (# of stocked plots)
4. To quantify general browse damage on tree regeneration
5. To collect qualitative observations on stand health (Emerald Ash Borer/Beech Bark Disease presence or absence; presence or absence of other health issues and oak wilt)
6. To quantify understory competition; herbaceous and woody (non-tree) plants percent ground cover
7. To assess or rate timber quality of the stand via assessment of tree log quality (butt log grade; crop tree status; cull rating)
8. To assess the overall vigor of stands and also individual trees
9. To quantify overstory canopy closure (% crown cover, crown transparency)

- **Optimum Inventory Systems**

1. Sampling Methods
  - a. The probability-based selection of sampling units is preferred to avoid bias and to provide correct estimates of sampling error (Avery and Burkhart 2002). Both simple random and systematic random sampling fulfill the most fundamental requirements of probability-based sampling.
  - b. Simple random sampling will have less or equal travel time than systematic random sampling if GPS is used.
  - c. The recommendation is simple random sampling as it also offers less travel time between plots using GPS, and is unbiased.
2. Stratification
  - a. Stratification in this project was used in order to group stands that have similar characteristics from management perspectives
  - b. Intensity of sampling has been increased on those stands that have special interest to the DNR, such as large acreage stands. During the first phase of the project, in consultation with the DNR, sampling those stands that are smaller than 25 acres in size for both cover types was excluded.
  - c. The 25-acres size cut off has reduced the number of stands to be sampled significantly (65 percent) while retaining over 75 percent of the total acreage for both cover types.
3. Inventory Design
  - a. A combination of variable radius and fixed area plot based inventory systems were selected for both the northern hardwood and oak cover types.
  - b. The design includes variable radius plots, fixed area plots and transects in order to estimate a wide range of stand level parameters was used in this project.
4. Core and Optional set of Variables and Their Measurement Error Tolerance
  - a. Core set of Variables

- I. Overstory Strata: Pole- and Sawlog-size tree data is collected using variable radius plots.
- II. Seedlings: Using a fixed area plot, seedlings are tallied by species and size class.
- III. Saplings: Using a fixed area plot, all saplings are tallied by one-inch size class, species and vigor (only for indicator species) classes.
- IV. Stand Level Data: IFMAP Level 4 cover type classification, percent crown closure and forest health issues are recorded for each plot, and then summarized for the whole stand.
- b. Optional Variables
  - I. An optional set of variables including individual tree height, 10-year radial increment, crown ratio, and site index can be collected along with core variables without major modifications to the design. Based on recommendations from the DNR, these variables have been dropped from the protocol (due to cost of collection).
5. Cost: Cost was estimated at \$22 per plot, but there are a number of other factors that play an important role when estimating the cost per plot variable. These include:
  - a. Sampling effort; i.e., plot size or BAF which eventually limits the number of "in" trees in the plot.
  - b. Spatial proximity of plots (travel distance between plots). This is where technology and sampling method play a major role.
  - c. Number of plots selected within a stand. Many contractors favor more plots in a stand in order to minimize the fraction of effort devoted to travel time.
  - d. Spatial distribution of stands, and thus traveling time and cost between the stands.
  - e. Terrain or forest type that needs to be inventoried.
  - f. Number of variables measured and relative cost of each; e.g., coring trees, total height measurement.
  - g. Resolution of a variable and its priority. For instance, counting seedlings by species, size, vigor and origin requires more time than just counting number of seedlings in a regeneration plot to the stocking level.
  - h. Field level measurement error tolerance for each variable. Higher accuracy increases cost, e.g., measuring height to the nearest 0.5' vs. 2'.
- **Sampling Intensity**
  1. The base minimum number of sample plots for each cover type was estimated based on sampling error, estimated from available OI and IFMAP data for the stand basal area. Size-density class was used to define strata in each cover type. Then, sampling intensity was calculated within these strata using between stand variability in stand average basal area as a proxy for within-stand variance. A minimum number of samples were estimated for each cover type by summing the estimates for each size-density class strata.
  2. It is recommended that the DNR use the data collected during the first year to revise sampling intensity and to achieve the desired accuracy level.
- **Locating Sample Plots Randomly in the GIS Environment**
  1. Hawth's Tool and ArcMap extension was used to assign the desired number of sample plots randomly in each stand. This process can be replicated for any stand or group of stands as desired by the DNR.

- **Data Processing Protocols**

1. Collection of Demonstration Data
  - a. Demonstration data were collected to help develop data processing protocols, to identify any problems while implementing the protocol, and to verify time estimates per plot.
2. Stand Level Estimates
  - a. A Microsoft Access database template was presented in order to summarize overstory, sapling and seed data at a per acre basis. These estimates can be expanded to provide stand average estimates based on the stand acreage.
3. Population (Strata Level) Level Estimates
  - a. Stand level estimates are generated at a per unit area level so that they can be expanded to the stand level by using stand area. The estimates at stand level can then be summarized at strata level using either pre- or post-stratification.

- **Limitations**

1. Objectives, Variable and Cost
  - a. Many tradeoffs were evaluated during the course of this project between scope at many scales and the estimated cost of the larger inventory project.
  - b. The RFP originally specified a large set of objectives and variables of interest, many of which were eliminated as a result of this evaluation.
  - c. If sufficient interest and funding develops, those stands that were excluded from the sampling protocol (due to cost constraints) could be sampled in the future.
2. Field Implementation
  - a. The field limitations of the recommended sampling system are as follows:
    - I. Habitat type classification and regeneration surveys are two of the high priority components of this inventory design. Collection of this data will limit the inventory season to last spring, summer and early fall.
    - II. In order to obtain the most efficient estimate, the selected BAF needs to vary by stand. This may not be practical if the DNR intends to collect data using contractors. The recommended BAF of 10 ft<sup>2</sup>/ac is based on the IFMAP Stage 2 data analysis.
    - III. The size of sapling and seedling plots depends upon observed variation in sampling elements and their spatial pattern. Therefore, plot size should vary for each stand. The size recommended of 1/300 acre and 1/100 acre for seedling and sapling plots respectively should be reevaluated based on analysis of the first year's data.
3. Overstory Canopy Measurements
  - a. A number of approaches are possible for assessing overstory canopy density. Typical approaches include: [1] ocular estimates, perhaps with the aid of field cards that illustrate hypothetical densities; [2] spherical dense; and [3] hemispherical photographs using a wide-angle lens that are post-processed using computer software to derive canopy closure measurements.
  - b. Ocular estimates are regarded as the most cost-effective and have been argued as less variable, likely because the field technician can move about the plot and develop a "consensus" estimate.
  - c. The DNR indicated a desire to collect both ocular and densitometer metrics, and procedures for collecting both are included in the final protocol and field manual.
4. Sample Size and Anticipated Accuracy
  - a. The sampling intensity numbers are based on only one stand level attribute, stand basal area, which may not be representative of variability for all other

estimated stand level attributes. If accuracy is the major factor, then it is advised to pilot the design or use data collected from first year as a pilot study to revise sampling intensity.

- **Conclusions**

The detail of core variables to be measured and their measurement error tolerance level has been set in consultation with the DNR. An optional set of variables including height, age, 10-year radial increment and site index has been dropped from the protocol. If deemed necessary in the future, these variables can be collected at a low intensity level; however, this will increase the cost from \$22 per plot. A database containing random plot locations for M and O type stands (>25 acres) and a detail field data collection procedure manual were developed.

- **Recommendations**

In order to implement this inventory design efficiently and effectively, the following are recommended:

1. Stands that do not meet limiting factor criteria should be eliminated as they may not qualify for future management.
2. A plot size of 1/300 acre for seedlings and 1/100 acre for saplings based on a literature review, cost per plot perspectives and illustration in field protocol was used. Plot size may ideally vary stand by stand, depending on management history and developmental stages. This may have some technical implication when writing a contract for field data collection. It is recommended to pilot both 1/300 acre seedling size and 1/100 acre sapling plots, and analyze whether they fulfill DNR requirements.
3. A post-stratification of stands based on Kotar habitat type is appropriate.
4. If the DNR intends to make use of these inventory data immediately, an estimation of site index for at least one dominant tree species in each stand is necessary.
5. Height is not a necessary variable as the DNR intends to use the IFMAP Stage 2 volume processor for volume estimation. If the DNR is interested in using this inventory data as inputs in FVS, a model-based approach is also an option to estimate total height using DBH, stand basal area and site index.
6. The DNR could pilot the effectiveness of using self-calibration routine in FVS by collecting and analyzing 10-year increment from selected stands across different habitat type classes for northern hardwoods. The cost for this size project could be approximately \$20,000.
7. If desired accuracy is the major concern, it is advised to analyze and adjust sample size based on the accuracy standard achieved from the data collected in year one.
8. A quality assessment and quality control plan is prerequisite for efficient and accurate data collection. The contractor or third party should come up with a QA/QC plan, which should address how the field crew will be trained and how quality checks and quality control will be enforced in the field.
9. If data are collected using a paper-based format, then the field data sheets should be stored so that if there are any discrepancies in field data recording, these can be traced and rectified in future.

**Dr. Froese** also provided the MFFA with a Field Data Collection Manual.

**Chair Saxton** left the meeting at 3:28 p.m. **Ms. Koch** resided as acting Chair.

**Mr. Neumann** stated the intent of the proposal was a springboard into the next project, to gather data and develop the report that Dr. Froese and his colleagues had provided. Implementing treatments would have been a second proposal.

**Ms. Koch** asked if there were any questions; there were none. She thanked Dr. Froese for his presentation.

## VI. FUTURE FFA ACTIVITIES

**Ms. Koch** stated the DNR needs to know how the MFFA board members feel about future meetings. **Mr. Suchovsky** asked if the DNR is going to pursue other ways to fund projects, what the role of the MFFA would be in that process. **Ms. Koch** responded she could see the role of the MFFA as assisting in finding other ways to fund, perhaps assisting in finding grants. Discussion ensued.

**Dr. Eisele** stated he understood that originally the basis of the group was to allocate strategic fund money. If there is no longer funding available, he sees no reason for the MFFA to continue, with the exception that if the economy changes the MFFA could re-form. **Mr. Brackenbury** reported the MFFA is a statutory authority. The only way to disband the MFFA is by legislative action or a Governor's Executive Order. Although the funding source has been removed, the MFFA is still a legal authority. It can make policy, give recommendations to the DNR, and advise the DNR, but it won't have the ability to take on certain initiatives that require a funding source unless funding is otherwise available.

**Ms. Koch** stated as a representative of the DNR, she is not recommending formal disbanding. She questioned if perhaps it was time for the MFFA to "lay back" a bit at this time. **Dr. Eisele** commented the DNR already has an advisory committee (Forest Management Advisory Committee [FMAC]); **Ms. Koch** responded the original intent of the MFFA was to look at bonding. The MFFA decided it didn't want to bond at that time. The MFFA appointees stay on the Board unless they are officially replaced or resign. **Ms. Koch** stated the core legislation that provides the MFFA's responsibilities hasn't changed since its formation 25 years ago. She commented at this point the MFFA may not need to meet as frequently; perhaps have an annual meeting to update it on what is happening. She also stated that at any point the MFFA could look at the possibility of bonding again.

**Dr. Eisele** asked what the DNR envisions is the difference between the MFFA and the FMAC roles; **Ms. Koch** responded the bonding authority is the real difference. **Ms. Boyd** added the MFFA role is limited by the statute. **Dr. Potter-Witter** commented there is an advantage to not disbanding the MFFA at this time, considering how difficult it was to get it established at the beginning. She stated she would like to give the MFFA more time before even considering disbanding; she has an interest in tracking the projects the MFFA initiated and would like to think there is some benefit in meeting and talking about the projects, in terms of knowledge. **Mr. Smyth** agreed with Dr. Potter-Witter, stating there is always the possibility the economy will begin to recover and further money will be made available to the MFFA, and if they are still a functional body they would not have to go through the formalities of getting the MFFA reestablished.

**Ms. Koch** asked the MFFA if they would like to reconvene in spring 2010. **Dr. Eisele** asked if there had to be a quorum present if the MFFA was only listening to reports; **Mr. Brackenbury** responded that to be a valid meeting, there must be a quorum present. **Ms. Koch** stated the DNR would propose to keep the MFFA as is, so when the time comes it is able to continue allocating funding for projects, it won't have to go through the long process of getting the MFFA reestablished and the Governor's office finding appointments. **Mr. Hagan** stated he thinks the MFFA should meet minimally once a year to go through lists, review projects and take care of any other business. **Ms. Koch** referred to Ms. Boucher and Ms. Boyd. **Ms. Boucher** responded it is a good idea to keep the MFFA in place, providing updates throughout the year. She

suggested a virtual meeting could be conducted if necessary as unforeseen opportunities come up. **Mr. Brackenbury** reminded the MFFA that it must approve the minutes from its last meeting, and must have draft minutes available to the public for the present meeting and approve the minutes at the next MFFA board meeting.

**MOTION:** **Mr. Smyth** moved to adopt postponing the next two meetings, and putting a spring 2010 meeting in place; supported by **Mr. Suchovsky**.  
**Motion passed unanimously.**

**VII. ADJOURNMENT**

**Ms. Koch** asked the MFFA if there was any further discussion; there was none. She suggested a motion to adjourn.

**MOTION:** **Dr. Eisele** moved to adjourn the June 24, 2009 MFFA Board meeting; supported by **Mr. Hagan**.  
**Motion passed unanimously.**